

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
29 April 2004 (29.04.2004)

PCT

(10) International Publication Number
WO 2004/035080 A1

- (51) International Patent Classification⁷: **A61K 38/08**, 38/12, A61P 11/06, 37/08
- (74) Agent: **GRIFFITH HACK**; 509 St Kilda Road, MELBOURNE, Victoria 3004 (AU).
- (21) International Application Number:
PCT/AU2003/001374
- (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (22) International Filing Date: 16 October 2003 (16.10.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
2002952129 17 October 2002 (17.10.2002) AU
- (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- (71) Applicant (*for all designated States except US*): **THE UNIVERSITY OF QUEENSLAND** [AU/AU]; BRISBANE, Queensland 4072 (AU).
- (72) Inventors; and
- (75) Inventors/Applicants (*for US only*): **SHIELS, Ian, Alexander** [AU/AU]; 17 Sherlock Road, Muilea Road, MUIRLEA, Queensland 4306 (AU). **TAYLOR, Steven, Maxwell** [AU/AU]; 17 Perdita Street, BELLBIRD PARK, Queensland 4300 (AU). **FAIRLIE, David** [AU/AU]; 73 Trevallyan Drive, SPRINGWOOD, Queensland 4127 (AU).
- Published:**
— with international search report
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

(54) Title: TREATMENT OF HYPERSENSITIVITY CONDITIONS

(57) Abstract: This invention relates to methods of treatment of hypersensitivity conditions such as asthma and other allergic conditions, and especially to treatment of these conditions with cyclic peptidic and peptidomimetic compounds which have the ability to modulate the activity of G protein-coupled receptors. The compounds preferably act as antagonists of the C5a receptor, and are active against C5a receptors on polymorphonuclear leukocytes and macrophages. Particularly preferred compounds for use in the methods of the invention are disclosed.

WO 2004/035080 A1

INTERNATIONAL SEARCH REPORT

International application No.
PCT/AU2003/001374

A. CLASSIFICATION OF SUBJECT MATTER

Int. Cl. ⁷: A61K 38/08, 38/12, A61P 11/06, 37/08.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
DWPI, MEDLINE; keywords- hypersensitivity, eczema, asthma, dermatitis, GPCR, G-Protein Coupled Receptor, c5a, c5aR.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|-----------|---|-----------------------|
| Y | WO 1999/00406 A (The University of Queensland) 7 January 1999 (07.01.99) See Whole document. | 1-27 |
| Y | WO 2002/24222 A (The Cleveland Clinic Foundation) 28 March 2002 (28.03.02) See claim 8 page 34. | 1-27 |
| Y | Bertrand C, et al "CCR3 blockade as a new therapy for asthma" Exp.Opin. Invest. Drugs (2000) 9 (1) pp43-52. | 1-27 |

☒ Further documents are listed in the continuation of Box C ☒ See patent family annex

| | |
|---|--|
| * Special categories of cited documents: | "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention |
| "A" document defining the general state of the art which is not considered to be of particular relevance | "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone |
| "E" earlier application or patent but published on or after the international filing date | "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art |
| "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) | "&" document member of the same patent family |
| "O" document referring to an oral disclosure, use, exhibition or other means | |
| "P" document published prior to the international filing date but later than the priority date claimed | |

Date of the actual completion of the international search
8 January 2004

Date of mailing of the international search report
15 JAN 2004

Name and mailing address of the ISA/AU
AUSTRALIAN PATENT OFFICE
PO BOX 200, WODEN ACT 2606, AUSTRALIA
E-mail address: pct@ipaaustralia.gov.au
Facsimile No. (02) 6285 3929

Authorized officer

G.R.PETERS

Telephone No : (02) 6283 2184

INTERNATIONAL SEARCH REPORT

International application No.

PCT/AU2003/001374

| C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT | | |
|---|--|-----------------------|
| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
| Y | Mita, H et al "Levels of cysteinyl leukotriene receptor mRNA in human peripheral leucocytes: significantly higher expression of cysteinyl leukotriene receptor 2 mRNA in eosinophils" Clinical and Experimental Allergy, 2001, Vol 31, pp 1714-1723. | 1-27 |
| Y | Johnson E, et al "Heterotrimeric G protein signalling: Role in asthma and allergic inflammation" J Allergy Clin Immunology, 2002 Volume 109, No 4 pp 592-602. | 1-27 |
| Y | Owen, C. "Chemokine receptors in Airway Disease: Which Receptors to Target?" Pulmonary Pharmacology and Therapeutics" (2001) 14, pp193-202. | 1-27 |

Information on patent family members

International application No.

PCT/AU2003/001374

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

| Patent Document Cited in Search Report | | Patent Family Member | |
|---|----------|----------------------|--------------|
| WO | 99/00406 | AU 80926/98 | EP 1017713 |
| | | | END OF ANNEX |